

**STATEMENT FOR THE RECORD**

**of**

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**Regarding a Hearing Entitled**

***“Implementing the National Biodefense Strategy”***

**Before the**

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**Committee on Homeland Security**

**Subcommittee on Prevention of Nuclear and Biological Attack**

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## INTRODUCTION

Good afternoon, Chairman Linder, Ranking Member Langevin, and distinguished members of the Committee. I am pleased to appear before you today to discuss the role of the Department of Homeland Security (DHS) in the implementation strategy and progress in executing the major provisions of *Biodefense for the 21<sup>st</sup> Century*.

Biological threats can take many forms and be distributed in many ways. Aerosolized anthrax, smallpox, foot and mouth disease, and bulk food contamination are among the threats that can have high consequences for humans and agriculture. Recognizing the natural availability of biological agents, their ease of production and use, infrastructure vulnerabilities, and need for a coordinated consequence management plan for a bioterrorist attack response, President Bush instructed Federal departments and agencies to review their efforts and find better ways to secure America from bioattacks.

In April 2004, this review culminated in approval of a joint strategy entitled *Biodefense for the 21<sup>st</sup> Century*. This strategy provides a comprehensive framework for our nation's biodefense. This directive builds upon past accomplishments, specifies agency roles and responsibilities, and integrates the programs and efforts of various communities – national security, medical, public health, intelligence, diplomatic, agricultural and law enforcement – into a sustained and focused effort against biological weapons threats.

The Department of Homeland Security (DHS) and the Science and Technology (S&T) Directorate have major responsibilities in this integrated national effort. In particular, I want to highlight our progress in implementing this comprehensive strategy and the effectiveness of our interagency collaborations with our key Federal partners, including those represented here today.

### **Mission and Objectives:**

The presidential directive *Biodefense for the 21<sup>st</sup> Century* outlines four essential pillars of the nation's biodefense program and defines the responsibilities of the various Federal departments and agencies with respect to implementing this strategy. The four pillars with the designated lead agencies shown in parentheses are:

- **Threat Awareness**, which includes biological weapons-related intelligence (intelligence community), risk and net assessments (DHS), and anticipation of future threats (HHS).
- **Prevention and Protection**, which includes proactive prevention (Department of State, Department of Defense, Department of Justice and the Intelligence Community) and critical infrastructure protection (DHS).
- **Surveillance and Detection**, which includes attack warning (DHS) and attribution (DHS analysis in support of lead agency).
- **Response and Recovery**, which includes response planning (DHS), mass casualty care (HHS), risk communication (DHS), medical countermeasures (HHS), and decontamination (EPA).

## **MULTIPLE DHS ORGANIZATIONAL ELEMENTS HAVE MAJOR ROLES IN IMPLEMENTING THE NATIONAL BIODEFENSE STRATEGY**

Before specifically addressing the activities of Science and Technology Directorate, it is important to note that several other DHS organizational elements have major roles and responsibilities in implementing the national biodefense strategy.

The Emergency Preparedness and Response Directorate (EPR) has the lead responsibility for working with other appropriate Federal departments and agencies, to develop comprehensive plans that provide for seamless, coordinated Federal, state, local, and international responses to a biological attack. To this end, EPR and its partners have developed the National Response Plan (NRP) and the National Incident Management System (NIMS). The NRP includes Emergency Support Functions (ESFs) to provide Federal resources during a response, including those for public health and medical services (ESF-8, HHS lead) and for agriculture and natural resources (ESF-11, USDA lead). EPR also operates the National Medical Disaster System (NMDS) and works closely with HHS in their lead for mass casualty care.

The Office of Domestic Preparedness/State and Local Government Coordination and Preparedness operates the Metropolitan Medical Response System (MMRS).

The Information Analysis and Infrastructure Protection (IAIP) Directorate has the lead for critical infrastructure protection (including agriculture and food); the S&T Directorate supports IAIP in this role. IAIP coordinates the National Infrastructure Protection Plan (NIPP) which includes shielding critical components of the nation's infrastructure and development of pre-event mitigation strategies. IAIP has the lead DHS role in outreach to the private sector through the interfaces provided by the various Sector Coordinating Councils and the Government Coordinating Councils. IAIP intelligence analysts also work closely with their counterparts in the National Counter-Terrorism Center (NCTC) the FBI, CIA and DIA in assessing the intent of the enemy, their capabilities, potential scenarios, and attack vectors. Working with counterterrorist experts in the Community, they develop link charts on potential associates here in the United States of operatives abroad who may have received training in weapons of mass destruction (WMD) capabilities or have knowledge of WMD programs.

The Public Information Office (PIO) works with other appropriate Federal departments and agencies to develop "comprehensive coordinated risk communication strategies to facilitate emergency preparedness for biological weapons attacks. This includes travel and citizen advisories, international coordination and communication, and response and recovery communications in the event of a large-scale biological attack."

## **S&T DIRECTORATE ROLES AND ACCOMPLISHMENTS**

Within the S&T Directorate, the responsibilities for implementing the National Biodefense Strategy fall within Biological Countermeasures Portfolio, which I direct. The mission of this Portfolio is to provide the understanding, technologies, and systems needed to protect against biological attacks on the nation's population, agriculture, or infrastructure. Within this mission,

the S&T Directorate has the lead role for decision support tools, risk assessments and support to intelligence, early detection and attack analysis, and bioforensics analysis.

DHS S&T also supports our partnering departments and agencies with their leads in other key areas of an integrated biodefense: the Department of Health and Human Services (HHS) on medical countermeasures and mass casualty response; the Department of Defense (DoD) on broad range of homeland security/homeland defense issues; the U.S. Department of Agriculture (USDA) on agriculture biosecurity; USDA and HHS on food defense; the HHS and Department of Veterans' Affairs (VA) on maintaining the Strategic National Stockpile and other pharmaceutical caches (antidotes, vaccines and ventilators); the Environmental Protection Agency (EPA) on response and recovery, including water safety; the Department of Justice on bioterrorism investigations; and the Intelligence Community on threat warnings.

Today I would like to focus on the technical progress of the Biological Countermeasures Portfolio as it relates to the pillars of defense outlined in *Biodefense for the 21<sup>st</sup> Century*.

## **THREAT AWARENESS**

Under *Biodefense for the 21<sup>st</sup> Century*, DHS has the lead responsibility for conducting threats assessments to guide prioritization of the Nation's on-going investments in biodefense-related research, development, planning, and preparedness. To this end, the S&T Directorate is leading three major threat assessment activities:

- Material Threat Assessments and Determinations to support Project BioShield development of medical countermeasures;
- Formal periodic risk assessments of a broad range of biothreat agents to guide the broader range of bio-defense investments; and
- Laboratory based characterization of the threats to close key gaps in informing the above risk assessments.

The first of these activities is being led out of the S&T Directorate's Biodefense Knowledge Center and the latter two out of the BioThreat Characterization Center (BTCC) of the National Biodefense Countermeasures and Analysis Center (NBACC).

In addition to these lead roles, DHS has worked closely with HHS, in their lead role, to develop a strategy for addressing engineered threats.

### *Material Threat Assessments (MTAs) and Material Threat Determinations for BioShield*

The Project BioShield Act of 2004 charges the Secretary of Homeland Security with the responsibility to determine which biological, chemical, radiological or nuclear threats constitute a Material Threat to our Nation's security. To fulfill this responsibility, the S&T Directorate, in partnership with the IAIP Protection Directorate, has been conducting formal threat assessments of the agents of greatest concern to establish plausible high consequence scenarios. These assessments combine intelligence information with technical assessments of the feasibility of a terrorist to produce and disseminate the agent to provide an indication of the number of exposed

individuals, the geographical extent of the exposure, and other collateral effects. If these consequences are of such a magnitude to be of significant concern to our national security or public health, the Secretary of DHS then issues a formal Material Threat Determination to the Secretary of HHS, which initiates the BioShield process. Subsequently, HHS, assisted by the interagency Weapons of Mass Destruction Medical Countermeasures subcommittee, determines the need for, and requirements of, any new medical countermeasures.

To date, the Secretary of DHS has issued Material Threat Determinations for anthrax, smallpox, botulinum toxin and radiological/nuclear devices. Assessments are nearly complete for plague, tularemia, and chemical nerve agents, and an assessment of viral hemorrhagic fevers will be initiated in August. Based on the outcomes of these assessments, the Secretary of DHS may issue additional Material Threat Determinations.

### *Risk Assessments across a Broader Range of Biological Threats*

As part of its responsibility in the President's National Biodefense Strategy, DHS is required to conduct periodic, formal risk assessments of a much broader set of biological agents to help prioritize the nation's ongoing biodefense activities. These risk assessments provide a systematic evaluation of the development and deployment of a broad range of biological threats, the vulnerability of different portions of our society to those threats, and the resulting consequences of any such attacks.

The first such formal risk assessment is due in January of 2006, with subsequent assessments due every two years. The scope, process, and timescale for this first assessment have been presented to and agreed to by the interagency Biodefense Policy Coordinating Committee co-chaired by the Homeland Security Council and the National Security Council. This risk assessment is addressing 29 biological agents and is being conducted in partnership with the Intelligence Community, HHS, DoD, USDA, EPA, the IAIP Directorate and others. Two advisory boards, one a Government Stakeholders Advisory Board and the other an Independent Risk Assessment Expert Review Board (academia, industry, and government), have been established to provide input and advice.

### *A Strategy for Addressing Emerging Threats*

Much of the biodefense efforts to date have focused on protecting against attacks with bioterrorism agents that can be (or used to be) found in nature. However, rapid advances in biotechnology demand that we also consider the possibility and impact of emerging or engineered agents, for example, modifications to organisms that increase their resistance to medical countermeasure or make them more difficult to detect. The President's *Biodefense for the 21<sup>st</sup> Century* assigns HHS the lead in anticipating such future threats. The S&T Directorate is partnering with HHS and others in formulating and implementing a strategy for anticipating and responding to such threats.

Based on intelligence information, available literature and expert judgment, we have developed an informed estimate of the types of emerging threats that might be within the ability of a terrorist organization to develop over the near (1-3 years), mid (4-10 years), and longer-terms (10

yrs). In this analysis, four elements stand out as essential to an effective defense against emerging threats:

- Threat, vulnerability and risk assessments to prioritize these threats in terms of the difficulty of their development and deployment, as well as their potential consequences;
- Surveillance and detection capabilities to rapidly detect and characterize engineered agents in environmental and clinical samples so as to provide timely guidance in the selection of the appropriate medical countermeasure;
- An expanded range of safe and effective medical countermeasures and an infrastructure to support rapid research, development, test, and evaluation (RDT&E) of new medical countermeasures; and
- Integrated concepts of operation (CONOPS) for the identification and response to emerging threats.

*Scientific research to better inform these threat and risk assessments*

The threat and risk assessments described above are performed with the best available information. However, there are large uncertainties, sometimes factors of ten to a hundred, in some of the key parameters and hence in the associated risks. One of the major functions of the threat and risk assessments is to identify these critical knowledge gaps, which can differ for different threat scenarios – in one case it may be the minimum amount of agent needed to infect a person; in another case it may be the time that such an agent remains viable (capable of causing an infection) in the air, food or water; and in a third it may be the effect of food processing or water treatment on the agent's viability. Conducting the laboratory experiments to close the critical knowledge gaps is a primary function of DHS's National Biodefense Analysis and Countermeasures Center (NBACC).

Congress has appropriated a total of \$128M for design and construction of NBACC with the necessary biocontainment laboratory space and support infrastructure to conduct these and other experiments. NBACC will be built on the National Interagency Biodefense Campus (NIBC) at Ft. Detrick, MD, in close physical proximity to the DoD's United States Army Medical Research Institute of Infectious Diseases (USAMRIID), the HHS National Institutes of Health's Integrated Research Facility and the USDA's Foreign Disease-Weed Science Research Unit. NBACC is also collaborating with the HHS Centers for Disease Control and Prevention, a new member of the NIBC, to further address the critical knowledge gaps. The Record of Decision for NBACC's Final Environmental Impact Statement was signed in January 2005. Design of the facility began in March 2005, with construction scheduled to begin in FY 2006 and be complete by the fourth quarter of FY 2008.

Currently, interim capabilities for both NBACC's biological threat awareness and bioforensic analysis functions have been established with other government and private laboratories to allow vital work in these areas to occur during the NBACC facility's construction

**PREVENTION AND PROTECTION: CRITICAL INFRASTRUCTURE PROTECTION:  
AGRO-DEFENSE**

*Biodefense for the 21<sup>st</sup> Century* tasks DHS with leading efforts to protect critical infrastructures from biological attack. HSPD-9 further details these responsibilities for protecting agriculture and food. Significant S&T Directorate roles include:

- Acceleration and expansion of the development of current and new veterinary countermeasures;
- Developing with USDA a plan to provide facilities for research and diagnostic capabilities for foreign animal and zoonotic diseases; and
- Establishing new university centers of excellence for agriculture and food security.

In 2003, the S&T Directorate and USDA (Agricultural Research Service [ARS], and Animal and Plant Health Inspection Service [APHIS]) began developing a joint strategy for foreign animal disease. One of the first goals of the strategy is to develop veterinary countermeasures for foot and mouth disease. Following the process laid out in the strategy, ARS has the lead for basic research and early development of vaccines and immunomodulators (antivirals). Potential candidates are then transitioned to DHS for continued development with industry. Once appropriate products are developed, APHIS supplies them to the National Veterinary Stockpile. Interagency coordinating meetings were held as recently as May 2005 to review progress on the joint strategy.

As part of the integrated biodefense complex, the S&T Directorate operates the Plum Island Animal Disease Center (PIADC) and two Homeland Security (HS) Centers of Excellence in agricultural security described below.

#### *Plum Island Animal Disease Center*

PIADC is a critical national asset in the strategy for addressing foreign animal diseases. This strategy includes programs on:

- Net assessment of the foreign animal disease threat;
- Vaccines and therapeutics:
  - Improved current vaccines (onset of immunity, adjuvants);
  - Development of next-generation vaccines and immunomodulators; and
  - Transition of promising candidates to industry partners for full product development.
- Assays and diagnostics:
  - National and international validation;
  - Enhanced diagnostics capability and surge capacity; and
  - A new bioforensics capability.

The overall goal of this strategy is to expedite the transition of new vaccines and immunomodulators to the USDA National Veterinary Stockpile and of new validated diagnostics to the USDA National Animal Health Laboratory Network (NAHLN), as well as increasing surge capacity at critical nodes of the response infrastructure.

In addition to these research and diagnostics programs, the S&T Directorate has responsibility for the maintenance and operations of the PIADC facilities, including necessary upgrades and enhancements of facilities and security.

To facilitate overall coordination of these programs at PIADC, a Board of Directors has been established, chaired by the S&T Directorate and including the administrators of both ARS and APHIS. In addition, the Office of Science and Technology Policy's National Science and Technology Council recently established a new Subcommittee on Foreign Animal Disease Threats which is co-chaired by USDA and the S&T Directorate and provides a valuable new interagency forum for cooperation.

### *NATIONAL BIO AND AGRODEFENSE FACILITY*

PIADC is a unique and critical facility for the nation's foreign animal disease defense and celebrated its 50<sup>th</sup> anniversary in 2004. Thus, the facility is now well beyond its originally planned life span, and is in need of recapitalization.

In FY 2005 the S&T Directorate is funding a conceptual design study for a next-generation facility, the National Bio and Agrodefense Facility (NBAF). The goal of this study is to determine the programmatic drivers for the necessary size and scope of the facility and the research and development to be conducted there. Three major programmatic themes are being considered:

- The historical PIADC mission for foreign animal disease research in livestock, with needs anticipated over the lifetime of the new facility (approximately 40 years);
- The study of zoonotic diseases, including associated requirements for specific biosafety levels of containment; and
- Testing and evaluation required for approval of medical countermeasures by the Food and Drug Administration (FDA) in HHS.

DHS is working closely with its interagency partners throughout this planning process, including USDA and HHS.

The proposed FY 2006 budget for DHS includes \$23M for the architectural and engineering design and pre-construction costs of the NBAF.

### *University Centers of Excellence*

In addition, the S&T Directorate has established two University Centers of Excellence explicitly focused on agricultural and food protection. Texas A&M University and its partners from the University of Texas Medical Branch, University of California at Davis, and the University of Southern California have formed the National Center for Foreign Animal and Zoonotic Disease Defense. They are working closely with partners in academia, industry, and government to address potential threats to animal agriculture, including Foot and Mouth Disease (FMD), Rift Valley fever, avian influenza, and brucellosis. The University of Minnesota and its partners, Michigan State University, University of Wisconsin at Madison, North Dakota State University,



Georgia Institute of Technology, and the University of Tennessee at Knoxville have formed the National Center for Food Protection and Defense. They are addressing food issues related to post-harvest food protection, including developing a prototype food event modeling system, new risk communication approaches to minimize the potential impact of food contamination events, and realistic decontamination scenarios involving surrogate agents and food matrices.

## **SURVEILLANCE AND DETECTION: ATTACK WARNING**

*Biodefense for the 21<sup>st</sup> Century* calls for “creating a national bioawareness system (that) will permit the recognition of a biological attack at the earliest possible moment and permit initiation of a robust response to prevent unnecessary loss of life, economic losses, and social disruption.” Some of the key S&T Directorate activities in support of this are:

- Development and upgrading of a BioWatch, an urban bioaerosol monitoring system currently operating in more than 30 cities;
- Coordination of interagency biodetection activities; and
- Design of the National Biosurveillance Integration System (NBIS).

### *BioWatch*

In early 2003, DHS, in partnership with the EPA and CDC, deployed the BioWatch environmental monitoring system to protect our nation’s cities from the threat and ramifications of a bioterrorist attack. This first generation system (Gen 1 BioWatch) uses air samplers distributed throughout a city, with filters retrieved daily or more frequently and brought to a nearby Laboratory Response Network (LRN) laboratory for genetic (PCR) analysis. Results are available within 12 hours of filter retrieval. This system has been operating for more than two years and has performed greater than 1.5 million assays without a false positive.

We are now in the midst of deploying a second generation system (Gen 2 BioWatch), which increases the number of collectors in the top ten or so threat cities two to four-fold thereby decreasing the minimum size attack that can be detected and increasing the probability of detection.

Because Gen 1 and Gen 2 systems involve the manual collection of filters and analysis by laboratory staff, labor costs account for about 75% of the operational costs associated with these systems and hence limit both the number of collectors deployed and the frequency with which filters are retrieved. To overcome these limitations advanced next generation detection platforms are currently under development which will automatically perform the detection analysis at the air sampling sites and wirelessly transmit any positives to the LRN laboratory for human confirmation of the signal interpretation. These systems will allow much more frequent sample analysis and address an expanded range of agents. Laboratory tests will be completed in FY 2006 and field tests in FY 2007. The system will then be piloted in an existing BioWatch city (FY 2008) before initiating full scale deployment in FY 2009. The autonomous nature of this Gen 3 system and its low operational cost should allow us to greatly expand the coverage provided by BioWatch.

We are also developing a Biological Warning and Incident Characterization (BWIC) System to assist the local decision makers in determining the public health significance of any BioWatch positive and also to assist in reconstructing the event to guide the response. To accomplish this BWIC integrates BioWatch data with plume and disease modeling and with medical surveillance data (e.g. from CDC's BioSense system) to provide an improved understanding about the possible origin and extent of the release and some estimate of its possible impact. BWIC is currently being piloted in two cities, and upon completion of the pilots will begin a phased deployment to other BioWatch cities.

#### *Coordination of interagency bio-monitoring and biodetection activities*

Since the initiation of BioWatch, the United States Postal System (USPS) has initiated the Biohazard Detection System for the monitoring of mail distribution centers and the DoD has initiated its Installation Protection Program Guardian for monitoring of military bases. In addition, multiple agencies are involved in the testing of 'white powders' from various sources. Recognizing the need for a more coordinated and integrated approach to such biomonitoring, the S&T Directorate has initiated several programs to improve interagency coordination in this area.

BioNet is a DHS funded, DoD executed program to pilot an integrated civilian and military concept of operations for the early detection and characterization of biological events. The pilot is currently taking place in San Diego, CA, and will be completed this fiscal year. It will provide common (or similar) architectures, operational protocols and communication processes to link existing/projected civilian and military biological detection systems.

Bio-monitoring MOU: An interagency Memorandum of Understanding (MOU) on Coordinated Monitoring of Biological Threat Agents has been signed by DHS, HHS, DoD, DoJ/FBI and USPS and is currently being implemented. The MOU calls for a written plan for coordinated air monitoring; protocols and timelines for shared prompt notification; determining the "equivalency" of biothreat agent testing performed by the participating agencies; and a joint technology roadmap to better leverage Federal investments. In addition the MOU also contains the initial steps in extending this approach to other biodetection measurements. This MOU seeks to address the issues relevant to biological agent detection and characterization necessary to make public health or national security decisions. It does not address subsequent responses which would be addressed by other arrangements and mechanisms.

Public Health Actionable Assays: In coordination with CDC and DoD, we are formulating an approach for working with the private sector to make very high quality, extremely low false alarm rate assays available to them for use in commercial detection technologies. In this approach, the U.S. Government would provide industry with the appropriate signatures to be tested on their detection platforms using their protocols but tested by a U.S. designated independent laboratory. If the combination of signatures, protocols, and platform meet the equivalency requirements established under the MOU then the combination (called an assay) would be designated a "USG – Public Health Actionable Assay" meaning that any positive results would not have to be retested in a government laboratory prior to alerting the Public Health Community. This approach will be piloted in FY 2006.

### *Development of the National Biosurveillance Integration System (NBIS)*

There are many other biosurveillance activities being undertaken by various Federal Departments and agencies. For example, CDC is developing an electronic medical surveillance system (BioSense) to look for early medical indicators of a possible biological attack, and USDA and HHS are developing the laboratory network for detecting and responding to possible food contamination. It is important that the information from all these sector specific biosurveillance systems be brought together to form a comprehensive biosurveillance situation awareness or common operating picture. To that end, the S&T Directorate has worked with the various Federal Departments and with industry to design the National Biosurveillance Integration System (NBIS). NBIS will integrate information on the state of health of people, animals and plants with bio-monitoring of air and water, with results from regulatory testing of food, and with real-time threat information so as to provide the earliest possible detection and characterization of a possible bio-attack. The initial design was completed in early FY 2005 and has been transferred to the IAIP Directorate for implementation.

### **SURVEILLANCE AND DETECTION: ATTRIBUTION**

*Biodefense for the 21<sup>st</sup> Century* specifically names the National Bioforensics Analysis Center (NBFAC) of the National Biodefense Analysis and Countermeasures Center (NBACC) as the lead Federal facility to conduct and facilitate the technical forensic analysis and interpretation of materials recovered following a biological attack in support of the appropriate lead Federal agency. As noted above, a new NBACC facility will be constructed on the National Interagency Biodefense Campus (NIBC) at Ft. Detrick, MD. Pending completion of that facility in FY 2008, an interim NBFAC capability has been established in leased biocontainment space at USAMRIID also located at Ft. Detrick. This leased space was totally renovated to provide a contamination-free environment for ultra high sensitivity forensic work. In a short span of only 12 months, NBFAC has become operational and is now conducting casework supporting on-going FBI investigations of biocrimes or acts of bioterrorism. To date, NBFAC is already processing over a hundred samples per month. All evidence receipt, accessioning and processing are being conducted in secure, contamination free, biocontainment space within the interim NBFAC laboratory. This is a capability that was non-existent at the time of the anthrax attacks in the fall 2001.

To further bolster the admissibility and validity of biological evidence analytical results used in court proceedings, NBFAC will obtain the International Organization of Standardization (ISO) 17025 certification as a reference analytical laboratory in 2005-06. To meet stringent ISO certification requirements, NBFAC has established a stand-alone Safety and Biosurety Program, Quality/Accreditation Program, and received select agent handling certification from Centers for Disease Control and Prevention (CDC) for all laboratory staff and facilities. Standard operating procedures and protocols are in place for evidence handling and analytical flow processes.

To provide reference microbiological material against which to compare suspect samples, the NBFAC has established a National Bioforensic Repository Collection (NBRC). The repository

is developing and implementing a comprehensive management plan and acquisition strategy in FY 2005 and will continue implementation throughout FY 2006.

NBFAC has also taken several major steps to extend its analytical capabilities. It has implemented interagency agreements with other federal laboratories to provide capability for specialized analysis and surge requirements and it has implemented a robust research and development (R&D) initiative to develop next generation forensic tools. The R&D program focuses on: developing improved protocols for sample collection, preparation, and extraction; validating new genotyping approaches for more precise and rapid identification of suspect samples; and implementing novel methods for analyzing of the physical and chemical signatures of bioterror agents and their associated matrices to look for differences in the processes used to grow, harvest, process and deliver agents.

## **RESPONSE AND RECOVERY**

Attack with a biological agent can cause widespread contamination of large outdoor urban areas and the included facilities and critical infrastructure that are beyond the scope of current protocols and procedures to address in a timely and cost effective manner. Recognizing the importance of the addressing these issues, *Biodefense for the 21<sup>st</sup> Century* has charged EPA, in coordination with other Federal departments, to develop strategies, guidelines and plans for decontamination of persons, equipment and facilities and has charged DHS with the lead in developing decontamination methodologies for critical infrastructures.

To support these responsibilities, the S&T Directorate has focused on providing systems solutions through the use of so called domestic demonstrations and applications programs (DDAPs) which bring together users, technologies and procedures to demonstrate in integrated solution to a problem. This approach has been used successfully in the past to develop urban monitoring systems which later became BioWatch and detection and response systems in transit facilities (PROTECT) currently operating in several metropolitan subway systems. Two DDAPs are currently underway on the protection of critical infrastructures, using airports as a model system. The first of these, the PROACT program, has developed “Guidelines to Improve Airport Preparedness against Chemical and Biological Terrorism” that have been provided to the Transportation Security Administration (TSA) and the Federal Aviation Administration (FAA) for review and distribution to airports around the nation. The second of these, the Restoration DDAP, is focused on the recovery of an airport following a biological attack. This program is being conducted in collaboration with the San Francisco International Airport (SFO), the EPA, and CDC (NIOSH) and is focused on developing tools and protocols to significantly reduce the time it currently takes to decontaminate a facility. The major deliverable, due in FY 2006, is a pre-reviewed (by EPA) decontamination plan for SFO that can serve as a template/guideline for other airports in the nation and which will have been demonstrated in concert with the operational user/facility, responders and other federal partners to provide a systems solution to the problem.

The S&T Directorate also co-chairs with EPA the Subcommittee of Decontamination Standards and Technology, assembled by the Committee on Homeland and National Security of the National Science and Technology Council. The objectives of the Subcommittee are to facilitate

the development of consistent guidelines, testing protocols, certification methods, and reassessment strategies to address incidents involving biological and chemical agents. The Subcommittee will examine current barriers to standardization and interoperability between agencies and recommend strategies to remove such barriers. A technology gap analysis will be performed to develop a research initiative as well as addressing Human Decontamination issues.

## **CONCLUSION**

The Department of Homeland Security and the S&T Directorate's Biological Countermeasures Portfolio fully support the national biodefense program as stated in *Biodefense for the 21<sup>st</sup> Century*, and other Homeland Security Presidential Directives. Moreover, these programs are conducted in an active collaboration with other Federal departments and agencies having a role in meeting this national priority, and are focused on reducing the threat of a biological attack against this nation's population and its agriculture and food critical infrastructures, and supports a science-based forensics and attribution capability.

This concludes my prepared statement. With the Committee's permission, I request my formal statement be submitted for the record. Mr. Chairman, Ranking Member Langevin, and Members of the Committee, I thank you for the opportunity to appear before you and I will be happy to answer any questions that you may have.